

This issue of *The Veliger* is dedicated  
to the memory and many contributions of  
Donald Putnam Abbott  
(1920–1986)

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DONALD PUTNAM ABBOTT, Stanford University Professor Emeritus of Biology, died of cancer in Honolulu, Hawaii, on 18 January 1986. He was 65 years old. Dr. Abbott had retired in 1982, after 32 years on the faculty of Stanford University, and moved to Hawaii with his wife Isabella, who is a professor of botany at the University of Hawaii. He had planned to devote himself to his studies of the biology of ascidian tunicates, and to his inquiries into the origins of the chordates and of the mollusks. And until several months before his death he was able to do so, combining these endeavors with wide and long-postponed travels.

Donald Abbott was born and raised in Chicago. In 1937, at the age of 16, he left Chicago and headed west, eventually making his way to Hawaii. One can only imagine the impact this extraordinary journey must have had on him, as that city youth crossed the West of the late Depression and finally traded Chicago for the Hawaii of those pre-war times. But one thing is clear: for Abbott, his journey and its consequences were already part of a whole life of voyages, of quests. He entered the University of Hawaii in the fall of 1937, and received his bachelor's degree there in zoology in 1941. When the outbreak of war cut short Abbott's graduate studies, he helped instruct at the University, and in 1943 he enlisted in the army for the duration of the war. In 1943, too, he married his college classmate, Isabella Aiona. After his discharge from the army, Abbott attended the University of California at Berkeley. There, he received his master's degree in 1948 and his doctorate in 1950. He studied at Berkeley under the legendary S. F. Light and then, upon Light's death, completed his dissertation with Ralph Smith.

In 1950 Abbott joined the faculty of Stanford University's Hopkins Marine Station, and he remained with Stanford for his entire career. The year-round faculty at that seaside lab was small and fine—for a long time just Don Abbott, Lawrence Blinks, Rolf Bolin, and C. B. van Niel—and the influx of summer faculty and researchers annually enhanced even this superb nucleus. At Hopkins, Abbott developed his summer course in invertebrate zoology. From the course's dawn fieldtrips, all-morning lectures, and all-afternoon labs emerged a generation of zoologists who would be acquainted not only with comparative biology as a science but also with the animals themselves as the best of all teachers: "The animal is always right!" was virtually the course's slogan.

Abbott taught his course with breathtaking intensity

and with such clarity that one's lecture notes seem to carry his very tone of voice years later. One particularly memorable lecture was his expansive summary of crustacean types, replete with seventeen multicolored blackboard drawings, to which many of us still turn to make sense of the regions and appendages of crustacean bodies. In the afternoons Abbott took his own place at the lab-bench among his students; even as the rest of us flagged, he continued his day of careful and indefatigable observation. He showed us what stamina meant! Many of us found his example on these occasions to be exactly what we needed; as we gained our own stamina and commitment, the richness and invigorating pleasure of invertebrate zoology seemed to open itself just naturally to us. Over the three decades that he taught this course, Abbott compiled a large portfolio of working drawings. "Sketches," he preferred to call them, but in fact they are extraordinary in revealing the organisms depicted, in demonstrating how to share what one sees, and in their sheer beauty. Galen H. Hilgard, who was one of Abbott's graduate students, is currently editing and preparing a collection of these drawings for publication.

Donald Abbott was also one of the founding faculty and driving forces of the famous "spring course" in the 1960's and 1970's at Hopkins Marine Station. He felt that the best way to learn about marine biology was to do it, and so the entire Hopkins faculty of that time joined together each spring to teach about 25 undergraduates from the Stanford campus. The course's subject differed from year to year: for example, it might be a taxon such as *Tegula funebris*, or a topic such as DDT's effects in the sea. After some introductory lectures to get their bearings, students warily ventured into research projects on that year's subject. They worked for some two months under professorial care and with one another's encouragement. At the end of the course, at a two-day symposium, the students, many of them transformed into apprentice biologists by the experience of the course, formally presented and discussed the results of their work. And then, beyond the course itself, many students carried their work on to publication, virtually all with Dr. Abbott's attentive help through this daunting further experience. It was in this way that *The Veliger* published, as three special supplements, undergraduate research reports from the Stanford spring course. The spring course soon became nationally famous for the caliber of its teaching and of its students' efforts, and it has now inspired many others of

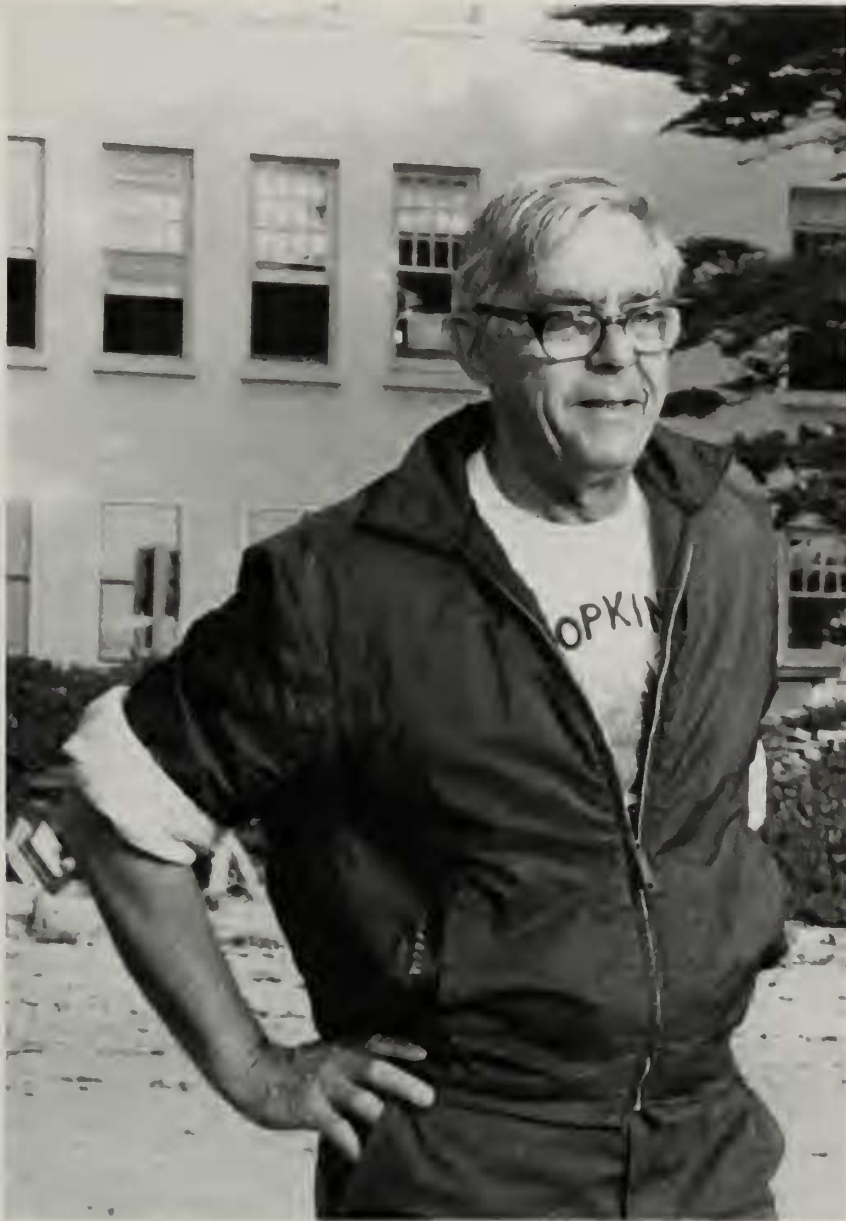


Figure 1

Don Abbott at Hopkins Marine Station during the summer of 1982. (Photo: Galen Kent Howard)

its kind. Abbott threw himself into these spring courses. He called each one "a whole new expedition."

Twenty-six doctoral and 10 master's students studied principally with Dr. Abbott, and he was the mentor, as well, of many more. His students' research topics were of a remarkable variety, but nearly always they addressed an issue in organismic biology, in the biology of evolutionary and ecological diversity—in "natural history." They expressed his persuasion that one must make sense

of biological processes by comprehending their relationships to whole organisms. In this style and perspective, he was in the tradition of the great naturalists, both at Hopkins Marine Station and when leading research trips abroad. In this latter role Abbott was chief scientist on several expeditionary cruises of the research ships *Te Vega* and *Proteus*. These cruises took him and many students to the Indian Ocean, the southwest Pacific, Hawaiian waters, the coast of British Columbia, Baja California, and the

Pacific coast of tropical America. And in his own studies, Abbott conducted especially notable expeditionary work on Ifaluk Atoll in the Caroline Islands, in the Philippines, on the Galápagos Islands, and in Chile.

His sojourn on Ifaluk Atoll in 1953 was surely the "naturalist's voyage" of Donald Abbott's life. With Marston Bates, he recounted the magic of it in their book, *Coral Island*. From June to November that year Abbott and a few other researchers lived among the 260 inhabitants of that little atoll and studied the natural history of the atoll and "the natural history of Micronesian man." He had long since been captivated by the tropical Pacific; the experience of Ifaluk perfected its spell. He was already an accomplished young biologist; he returned from Ifaluk a seasoned naturalist, tested and proved by weeks of continuous fieldwork on a coral reef. Without an experience of that kind, he would later declare, "no biologist ought to consider himself fully educated." And he returned profoundly moved by what he had learned about Oceanic alternatives to Western ways. His life thereafter was infused by the possibilities of these alternatives. He had always favored, as he later wrote, "cooperative inquiry into nature and man, rather than competitive struggle for individual achievement and fame." Now, among Ifalukians and among his fellow scientists there, he had seen this ideal realized in that tiny and remote place. He wore what he learned there as surely in his heart as he did the Ifalukian porpoises tattooed on his thigh.

On his way home to California from Ifaluk, Abbott was struck down by polio, so badly that his life hung in the balance. Though he recovered gradually from the worst of it, he then faced the likelihood that he would never walk again. With enormous patience and effort, he regained his mobility. But even after the success of this comeback, the ordeal gave his outlook on life an urgency that never left him. Even though he eventually was well again, that slight limp could not help but remind him of his terribly close call, and he responded to this reminder with a drive that characterized all his subsequent work and with the personal intensity that all of us around him felt.

"I feel sorry," Abbott once wrote, "for the man who isn't wholeheartedly devoted to at least one thing in the realm of man or nature." His own wholehearted devotion was for ascidians. His publications about them are papers of singular elegance. For example, his doctoral thesis, published in 1953, presented a lucid and now classic description of morphogenesis in the buds of the ascidian *Metandrocarpa taylori*. With his student Winona Trason he described in 1968 the spectacular ascidians *Ritterella rubra* and *Distaplia smithi*. Abbott and Jeffrey Johnson in 1972 at last sorted out the tangle that had confounded efforts to tell *Styela montereyensis* from "*Styela barnharti*" (actually *S. clava*, but confused, beyond that, with *S. plicata*). In fact, the two now seem almost unmistakable—now that Abbott and Johnson have shown us how to look

at them! In 1954 and again in 1975, Abbott prepared the urochordate keys for "Light's Manual," *Intertidal Invertebrates of the Central California Coast*. In the last few years he undertook a thorough review and revision of the genus *Ascidia*. When he died, he was in the midst of this endeavor, and he also had neared completion of an account of the ascidians of the Hawaiian reefs, to which he had returned so happily in retirement.

In the late 1970's Abbott teamed with Eugene Haderlie and various chapter-contributors to write "the big book," *Intertidal Invertebrates of California*. The photographer R. H. Morris provided many of the photographs for this book. This splendid volume, which was published in 1980, immediately became an indispensable reference for all West Coast zoologists. "We'll only put in natural history," Abbott once declared. But for him, of course, "natural history" ran the gamut from DNA to ecosystems ecology—whatever good work could be related sensibly to the life of the organism in its environment; and so the species accounts quickly became encyclopedic surveys of just about any aspect at all of the biology of the organisms in the book.

The surveys were encyclopedic, but often scanty, because we know so little about so many inhabitants of our shores. And so, as much as it is an account of what we do know, the big book is also a guide to the questions we might ask next about the species it describes. For in an epoch of uncertain answers, Abbott stressed the significance of *questions themselves*. His inquiries about research characteristically began not with "What are you doing?" but rather with "What are you asking?" He taught how to pose questions, how to press and sustain them, how to adapt them to one's organisms, and how to recognize the organisms' subtle answers. He taught this as a skill of paramount value—the means by which one really could become an investigative reporter of nature.

Beyond his own publications, Abbott dedicated himself to work on which his students and colleagues sought his help. Where others might have expected credit in the titles, he chose, rather, to let his own (often crucial) contributions to others' work simply be acknowledged as they saw fit. A list of papers recording his help—even just those acknowledging it with that special tone reserved for particular gratitude—would be tremendously long. Perhaps to his relief out of modesty, these paeons are scattered beyond retrieval throughout the literature of current invertebrate biology. And these are merely the explicit signs of an implicit presence of far wider magnitude: he taught and advised and encouraged his students and colleagues with truly untold generosity. From students' papers in the Hopkins spring course to colleagues' papers in ascidian biology, manuscripts fairly poured through his scrutiny. He had uncanny skill in locating the weak observation, the uncertain interpretation. He edited and even reorganized papers with deft tact. He pressed that ultimate condensation, the table and the graph, insisting on clarity.



And then—the transformed paper published—he would congratulate the author wholeheartedly. How many can the world hold like that? No wonder so many acknowledgments so often have a ring of special thanks.

Abbott was without peer in the care and accuracy of his teaching and research. As his students, we would try our utmost to imitate his standards and be glad to approach them from time to time. But then, too, his curiosity scarcely had horizons; he was constantly inquiring. He was a naturalist of ideas, and he delighted in romping far from his home “professional” terrain. As conversations spun out into the evening, he was apt to rise to any subject—“the nature of art, the meaning of ‘importance,’ the impact of the individual on history, and man’s place in the cosmos,” as he once summed it up. And he would just as likely go on to grapple with any giant social ill and to solve it by some impossibly rational scheme. Perhaps these ardent explorations best revealed why he once said “scientific research is the last refuge of the romantic.”

Donald Abbott was preeminently a teacher. He shared his ideas and insights with his fellow biologists as he did with his students: directly, unreservedly, and in person. His way was one of friendship, of humane engagement, of going beyond curiosity to real caring about others and

about their work, of “cooperative inquiry into nature and man,” of uncommon generosity. That is what it came to: generosity. Beyond the zoology that he taught us and the example of uncompromising care and of intellectual stamina that he set for us, beyond the fertile questions and ideas—beyond all that, we flourished in his generosity.

We flourished, and so did his family. From their first acquaintance in that undergraduate biology class, Don and Izzie carried their shared work in science as a special bond throughout their married life. He was immensely proud of her professional accomplishments and thoroughly dedicated to her distinguished career as a phycologist. He delighted in the opportunities they had to combine their separate specialities in joint research and teaching. Their daughter, Ann Kaiue Abbott, grew up nurtured by devoted parents. Don loved to tell of special moments they had all shared in her childhood; the mantelpiece at home held the many odd stones and coral carvings that Don and Ann had found or made together. In their home, we joined the pleasure of our science with the happiness of their family.

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